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**Surface Pressure Data for
a Supersonic-Cruise Airplane
Configuration at Mach Numbers
of 2.30, 2.96, and 3.30**

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**Barrett L. Shrout, William A. Corlett,
and Ida K. Collins**

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National Aeronautics
and Space Administration

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SUMMARY

The tabulated results of surface pressure tests conducted on the wing and fuselage of an airplane model in the Langley Unitary Plan wind tunnel are presented without analysis. The model tested was that of a supersonic-cruise airplane with a highly swept arrow-wing planform, two engine nacelles mounted beneath the wing, and outboard vertical tails. Data were obtained at Mach numbers of 2.30, 2.96, and 3.30 for angles of attack from -4° to 12° . The Reynolds number for these tests was 6.56×10^6 per meter (2.0×10^6 per foot).

INTRODUCTION

As part of a continuing effort by the National Aeronautics and Space Administration to expand the aerodynamic data base for supersonic-cruise airplanes, a number of airplane configurations have been the subjects of extensive wind-tunnel and analytic evaluations. Some of these configurations (for instance, ref. 1) have been designed for best cruise performance at low supersonic Mach numbers with good transonic maneuvering capability preserved, whereas other configurations (refs. 2 and 3) have been designed for cruise at intermediate supersonic Mach numbers with some compromise in transonic maneuverability. A third group of configurations (for instance, ref. 4) is designed for good cruise performance at high supersonic Mach numbers with transonic maneuverability given little consideration in the design.

The configuration of this report falls into the third category, because it was designed for efficient cruise performance at Mach 3.0. Some of the characteristics of this configuration which contribute to its supersonic-cruise performance include a long, slender fuselage; a highly swept arrow wing with camber, twist, and thickness distributions designed for the cruise Mach number; and outboard engine nacelles located beneath the aft portion of the wing to provide favorable interference at supersonic speeds.

A 0.0375-scale model of this configuration was tested in the Langley Unitary Plan wind tunnel at Mach numbers of 2.30, 2.96, and 3.30. Forces and moments acting on the configuration were measured in the course of the tests, and the results are presented in reference 5. The purpose of the present tests was to measure surface pressures on the wing and fuselage on the same model and at the same Mach numbers as used in reference 5. The measured pressures are presented herein without analysis. Note that the configuration on which the pressures were measured did not include the fuselage chine (strake) and the ventral fin which were on the configuration of reference 5.

SYMBOLS

Values are given in both SI and U.S. Customary Units. The measurements and calculations were made in U.S. Customary Units.

b	wing span, 57.094 cm (22.478 in.)
C_p	pressure coefficient, $\frac{p_l - p_\infty}{q_\infty}$ (CP in table IV)
c	chord, cm (in.)
\bar{c}	wing reference chord, 54.333 cm (21.391 in.)
M_∞	free-stream Mach number (MACH NO. in table IV)
N	orifice number in pressure tabulation (see fig. 2 and table III)
p_l	local pressure, Pa
p_∞	free-stream static pressure, Pa
q_∞	free-stream dynamic pressure, Pa
t	thickness, cm (in.)
x	streamwise model station, positive rearward, model nose is at station 15.573 (6.131), cm (in.) (X in table IV)
y	spanwise distance from center line, cm (in.)
α	angle of attack, deg (ALPHA in table IV)
Λ	sweep angle, deg

Subscripts:

le	leading edge
max	maximum
te	trailing edge

DESCRIPTION OF MODEL

A three-view sketch of the model is shown in figure 1. The configuration has a modified arrow-wing planform with a leading-edge sweep of 75° on the main wing segment. A fillet is used to fair the wing leading edge smoothly into the side of the fuselage. At 73 percent of the wing semispan, the wing leading-

edge sweep changes to 60° for the outboard segment. The wing is twisted and cambered to provide a more efficient lifting surface at the cruise Mach number of 3.0.

The engine nacelles are flow-through ducts and were mounted beneath the wing at approximately 31 percent semispan and extend aft of the wing trailing edge. The duct center line at the inlet face was tilted down 1.6° relative to the horizontal reference plane and also toed inboard 1° relative to the fuselage center line.

The vertical tails were mounted at the span station where the leading-edge break occurred. The tips of the tails were rolled outward 20° from the vertical and the leading edge of each vertical tail was toed out 2.25° .

Some of the pertinent geometric characteristics of the model are given in table I. In addition, a listing of the computer-card images is given in table II for a numerical description of the model. The format for the listing is described in reference 6. This numerical model description is for the actual wind-tunnel model which was measured on a three-axis dimension-recording machine. There were minor differences between the left and right wings in the thickness distribution and camber; therefore, the measurements were averaged to produce the numerical model description.

TESTS AND INSTRUMENTATION

Tests were conducted in the Langley Unitary Plan wind tunnel at Mach numbers of 2.30, 2.96, and 3.30 at stagnation pressures of 73.161 kPa (1528 lb/ft^2), 103.852 kPa (2169 lb/ft^2), and 124.344 kPa (2597 lb/ft^2), respectively. The Reynolds number for the tests was $6.56 \times 10^6/\text{m}$ ($2.0 \times 10^6/\text{ft}$) and the stagnation temperature was held constant at 339 K (150° F) throughout the tests. The dewpoint was maintained at a sufficiently low level to prevent condensation shocks in the tunnel.

Strips of No. 45 sand grit, for inducing boundary-layer transition, were applied at appropriate distances behind the leading edge of all airfoil-shaped surfaces, on the interior and exterior of the nacelles, and on the configuration nose. The grit size was selected according to the method of reference 7 to ensure that there was fully turbulent flow over the model.

Pressure orifices on the model wing and fuselage were located as shown in figure 2. Upper surface orifice numbers appear beside circles representing the orifice location, while the numbers in parentheses indicate lower surface orifices. Table III presents the x and y locations for all orifices. Each orifice was connected to one of four scanning valves located within the model by a tube buried in the wing and fuselage. Pressures were measured by transducers attached to the scanning valves and referenced to the free-stream static pressure. Electrical leads from the transducers were routed back through the model support sting to the Langley Unitary Plan wind tunnel data-acquisition system. The scanning valves were operated in a mode which provided a 3-sec delay at each point to stabilize the system and then provided a sampling period of 1 sec at a rate of 30 samples/sec.

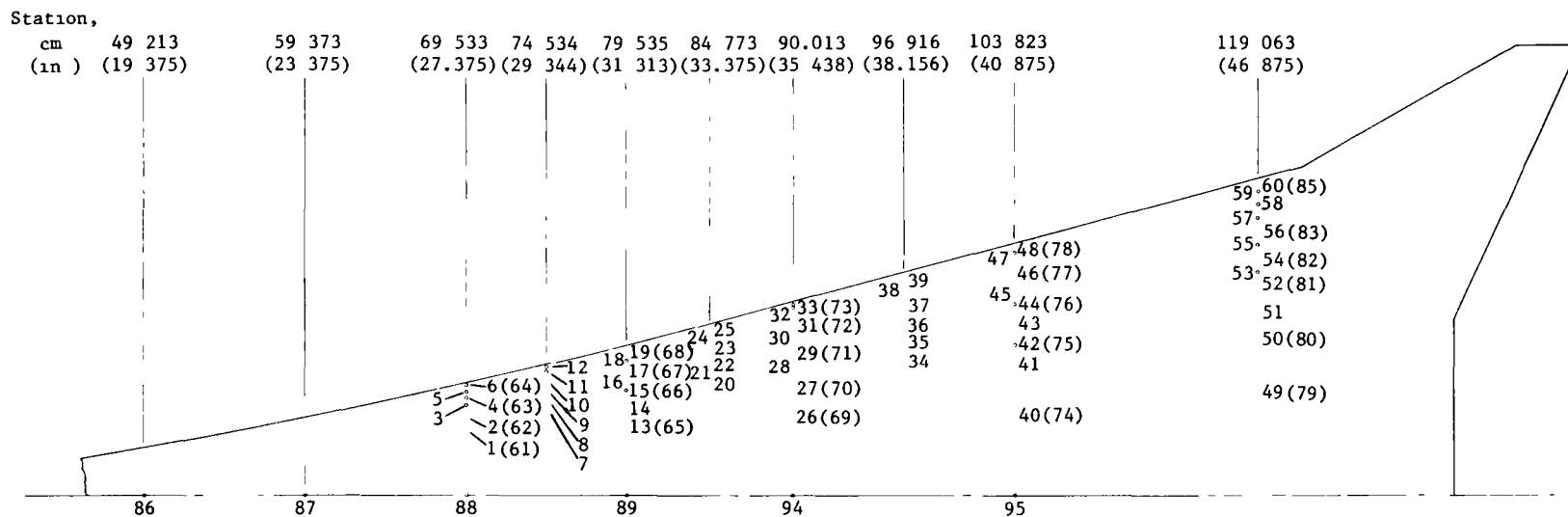


Figure 2.- Schematic drawing showing locations of pressure orifices. Numbers next to circles represent upper surface orifices; numbers in parentheses represent lower surface orifices.

All angles of attack have been adjusted for tunnel airflow misalignment and model deflection due to aerodynamic loads.

PRESENTATION OF RESULTS

The spanwise distributions of surface pressures on the configuration are given in table IV as a function of fuselage x station and orifice number for the various angles of attack (from -4° to 12°) and Mach numbers (2.30, 2.96, and 3.30) of this investigation. No analysis of the data is made.

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National Aeronautics and Space Administration
Hampton, VA 23665
March 29, 1979

REFERENCES

1. Dollyhigh, Samuel M.: Subsonic and Supersonic Longitudinal Stability and Control Characteristics of an Aft-Tail Fighter Configuration With Cambered and Uncambered Wings and Cambered Fuselage. NASA TN D-8472, 1977.
2. Shrout, Barrett L.: Aerodynamic Characteristics at Mach Numbers From 0.6 to 2.16 of a Supersonic Cruise Fighter Configuration With a Design Mach Number of 1.8. NASA TM X-3559, 1977.
3. Dollyhigh, Samuel M.: Experimental Aerodynamic Characteristics at Mach Numbers From 0.60 to 2.70 of Two Supersonic Cruise Fighter Configurations. NASA TM-78764, 1979.
4. Morris, Odell A.: Subsonic and Supersonic Aerodynamic Characteristics of a Supersonic Cruise Fighter Model With a Twisted and Cambered Wing With 74° Sweep. NASA TM X-3530, 1977.
5. Shrout, Barrett L.; and Fournier, Roger H.: Aerodynamic Characteristics of a Supersonic Cruise Airplane Configuration at Mach Numbers of 2.30, 2.96 and 3.30. NASA TM-78792, 1979.
6. Craidon, Charlotte B.: Description of a Digital Computer Program for Airplane Configuration Plots. NASA TM X-2074, 1970.
7. Braslow, Albert L.; Hicks, Raymond M.; and Harris, Roy V., Jr.: Use of Grit-Type Boundary-Layer-Transition Trips on Wind-Tunnel Models. Conference on Aircraft Aerodynamics, NASA SP-124, 1966, pp. 19-36. (Also available as NASA TN D-3579.)

TABLE I.- GEOMETRIC CHARACTERISTICS OF MODEL

Wing:

Area (reference), cm ² (ft ²)	2212.950 (2.382)
Aspect ratio	1.472
Span, cm (in.)	57.094 (22.478)
Λ_{le} (midwing), deg	75.00
Λ_{le} (tip), deg	60.00
\bar{c} , cm (in.)	54.333 (21.391)
Airfoil section ($2y/b < 0.7315$)	65A-00x
Airfoil section ($2y/b > 0.7315$)	Biconvex

Vertical tail (each):

Area, cm ² (in ²)	128.026 (19.844)
Aspect ratio	0.75
Λ_{le} , deg	53.95
Λ_{te} , deg	0.00
Mean geometric chord, cm (in.)	14.224 (5.600)
Airfoil section ($(t/c)_{max} = 2.4$ percent)	Biconvex

Nacelle:

Inlet capture area (each), cm ² (in ²)	13.794 (2.138)
Exit area (each), cm ² (in ²)	13.794 (2.138)
Nacelle base area (each), cm ² (in ²)	8.548 (1.325)

Fuselage:

Fuselage length, cm (in.)	128.194 (50.470)
Fuselage base area, cm ² (in ²)	7.742 (1.200)
Sting cavity area, cm ² (in ²)	6.587 (1.021)

(a) SI Units. All linear dimensions are in centimeters

8

TABLE II.- Continued

(a) Continued

.9985	1.0930	1.1695	1.2235	1.2525	1.2645	1.2505	1.2165	1.1800	1.1145	T	13
1.0290	.9220	.7975	.6510	.4825	0.0					T	13
0.0	.1205	.1805	.2970	.4245	.5215	.6285	.7255	.8840	1.0230	T	14
1.1085	1.1420	1.1940	1.2335	1.2515	1.2630	1.2660	1.2455	1.2150	1.1700	T	14
1.1185	1.0640	.9855	.8895	.7270	0.0					T	14
14.681	15.573	17.399	18.164	19.764	21.336	24.943	28.578	33.909	41.481	XFUS	10
47.628	49.784	52.032	54.595	57.153						XFUS	15
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Y	1
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Y	1
0.000	0.000									Y	1
2.416	2.416	2.416	2.416	2.416	2.416	2.416	2.416	2.416	2.416	Z	1
2.416	2.416	2.416	2.416	2.416	2.416	2.416	2.416	2.416	2.416	Z	1
2.416	2.416									Z	1
0.000	.043	.094	.094	.119	.119	.145	.145	.145	.145	Y	2
.145	.145	.145	.145	.147	.147	.147	.122	.122	.097	Y	2
.020	0.000									Y	2
2.314	2.314	2.314	2.339	2.339	2.339	2.339	2.339	2.339	2.339	Z	2
2.339	2.339	2.339	2.365	2.390	2.390	2.416	2.441	2.466	2.543	Z	2
2.568	2.568									Z	2
0.000	.069	.145	.196	.272	.348	.399	.450	.500	.500	Y	3
.500	.500	.500	.500	.475	.452	.427	.376	.325	.251	Y	3
.099	0.000									Y	3
2.217	2.212	2.212	2.210	2.210	2.210	2.210	2.210	2.261	2.261	Z	3
2.261	2.261	2.261	2.337	2.388	2.464	2.540	2.616	2.718	2.797	Z	3
2.873	2.901									Z	3
0.000	.043	.170	.272	.348	.475	.551	.556	.610	.610	Y	4
.610	.610	.610	.605	.594	.579	.554	.531	.480	.381	Y	4
.178	0.000									Y	4
2.136	2.136	2.162	2.134	2.134	2.159	2.182	2.182	2.233	2.233	Z	4
2.233	2.233	2.207	2.258	2.309	2.385	2.487	2.565	2.667	2.845	Z	4
3.000	3.053									Z	4
0.000	.191	.343	.445	.597	.749	.879	.897	.909	.897	Y	5
.897	.869	.861	.836	.823	.795	.754	.729	.704	.554	Y	5
.300	0.000									Y	5
2.009	2.009	2.007	2.032	2.032	2.029	2.055	2.080	2.103	2.154	Z	5
2.154	2.230	2.258	2.360	2.410	2.512	2.639	2.718	2.870	3.073	Z	5
3.254	3.307									Z	5
0.000	.249	.452	.655	.808	.960	1.118	1.168	1.191	1.184	Y	6
1.176	1.153	1.140	1.125	1.092	1.067	1.044	.993	.945	.719	Y	6
.442	0.000									Y	6
1.908	1.905	1.902	1.900	1.925	1.923	1.946	1.971	2.022	2.070	Z	6
2.047	2.149	2.200	2.250	2.355	2.456	2.558	2.685	2.865	3.223	Z	6
3.454	3.586									Z	6
0.000	.391	.620	.851	1.130	1.384	1.560	1.623	1.623	1.615	Y	7
1.615	1.598	1.572	1.554	1.547	1.506	1.440	1.316	1.118	.864	Y	7
.511	0.000									Y	7
1.654	1.651	1.648	1.648	1.671	1.694	1.720	1.793	1.819	1.849	Z	7
1.869	1.946	2.047	2.101	2.151	2.304	2.535	2.992	3.528	3.861	Z	7
4.117	4.196									Z	7
0.000	.391	.673	.953	1.308	1.613	1.920	1.984	2.004	1.986	Y	8
1.986	1.966	1.941	1.933	1.897	.849	1.725	1.527	1.278	.950	Y	8
.569	0.000									Y	8
1.450	1.448	1.471	1.468	1.516	1.539	1.613	1.661	1.712	1.760	Z	8
1.760	1.839	1.915	1.943	2.045	2.250	2.657	3.320	4.084	4.493	Z	8
4.752	4.831									Z	8
0.000	.490	.871	1.255	1.661	2.017	2.261	2.311	2.314	2.311	Y	9
2.306	2.289	2.261	2.258	2.250	2.174	1.951	1.577	1.252	1.001	Y	9
.544	0.000									Y	9
1.118	1.115	1.138	1.161	1.234	1.283	1.359	1.407	1.455	1.506	Z	9
1.532	1.582	1.687	1.737	1.791	1.994	2.835	3.932	4.423	5.156	Z	9
5.464	5.545									Z	9
0.000	.513	.998	1.481	1.966	2.499	2.672	2.690	2.690	2.672	Y	10
2.662	2.649	2.644	2.639	2.621	2.555	2.159	1.636	1.361	1.059	Y	10
.554	0.000									Y	10
.762	.785	.808	.879	.927	1.052	1.125	1.173	1.224	1.273	Z	10
1.323	1.351	1.377	1.405	1.455	1.687	3.063	4.719	5.585	6.045	Z	10
6.355	6.510									Z	10
0.000	.533	.965	1.501	2.111	2.670	2.982	3.012	3.023	3.020	Y	11
3.020	3.000	2.969	2.949	2.896	2.771	2.212	1.781	1.349	1.016	Y	11
.559	0.000									Y	11
.432	.432	.457	.508	.584	.711	.787	.838	.864	.965	Z	11
.965	1.044	1.146	1.196	1.400	1.730	3.485	5.034	6.281	6.764	Z	11
7.043	7.170									Z	11
0.000	.432	.813	1.323	1.984	2.593	2.873	3.099	3.139	3.147	Y	12
3.147	3.073	3.020	2.949	2.873	2.746	2.136	1.704	1.323	1.095	Y	12
.584	0.000									Y	12
.354	.330	.330	.406	.483	.610	.660	.737	.787	.838	Z	12
.838	1.044	1.196	1.400	1.628	1.933	1.866	5.342	6.459	6.891	Z	12
7.221	7.351									Z	12
0.000	.635	1.120	1.552	1.984	2.520	2.926	3.256	3.434	3.467	Y	13
3.467	3.404	3.264	3.081	2.903	2.700	2.118	1.689	1.308	1.029	Y	13
.572	0.000									Y	13
.229	.229	.277	.328	.378	.505	.605	.655	.732	.808	Z	13
.808	1.087	1.316	1.572	1.826	2.106	4.067	5.491	6.609	7.069	Z	13
7.348	7.478									Z	13
0.000	.686	1.196	1.679	2.136	2.644	3.076	3.510	3.942	4.018	Y	14
4.018	3.886	3.586	3.155	2.847	2.644	2.111	1.679	1.323	1.044	Y	14
.584	0.000									Y	14
.025	.051	.127	.203	.305	.432	.559	.610	.686	.838	Z	14
.813	1.196	1.476	1.755	2.009	2.314	4.171	5.570	6.637	7.018	Z	14
7.376	7.478									Z	14
0.000	.610	1.146	1.654	2.162	2.695	3.129	3.637	4.018	4.298	Y	15

TABLE II.- Continued

(a) Concluded

4.298	3.967	3.739	3.332	2.873	2.644	2.212	1.781	1.323	1.069	Y	15
.660	0.000									Y	15
-.076	-.051	-.025	.076	.203	.381	.483	.584	.584	.660	Z	15
1.222	1.476	1.704	1.908	2.085	2.517	3.840	5.136	6.662	6.993	Z	15
7.325	7.452									Z	15
57.153	60.201	63.249	65.662	70.589	97.259	112.499	118.214	123.927	130.178	XFIIS	10
131.295										XFIIS	11
0.000	.610	1.171	1.628	2.113	2.697	3.129	3.640	4.021	4.300	Y	1
4.300	4.097	3.868	3.589	3.129	2.799	2.621	2.189	1.781	1.323	Y	1
1.095	.663	0.000								Y	1
-.076	-.051	-.025	.076	.178	.356	.483	.559	.584	.663	Z	1
1.222	1.374	1.577	1.755	2.012	2.189	2.494	3.818	5.166	6.668	Z	1
7.000	7.330	7.483								Z	1
0.000	.739	1.374	1.935	2.393	2.875	3.053	3.256	3.868	4.326	Y	2
4.323	4.018	3.711	3.330	2.924	2.718	2.591	2.207	1.874	1.336	Y	2
1.003	.546	0.000								Y	2
-.229	-.203	-.099	.003	.157	.310	.389	.389	.541	.569	Z	2
1.638	1.816	1.941	2.068	2.195	2.398	2.626	3.797	5.093	6.543	Z	2
7.000	7.330	7.432								Z	2
0.000	.765	1.400	1.910	2.393	2.824	3.104	3.386	3.894	4.300	Y	3
4.275	3.970	3.640	3.310	3.002	2.723	2.570	2.139	1.781	1.374	Y	3
1.069	.610	0.000								Y	3
-.381	-.356	-.254	-.127	-.025	.152	.279	.279	.406	.483	Z	3
1.910	2.012	2.088	2.139	2.240	2.418	2.697	4.021	5.116	6.363	Z	3
6.871	7.178	7.305								Z	3
0.000	.739	1.298	1.857	2.367	2.824	3.104	3.310	3.818	4.300	Y	4
4.275	3.894	3.589	3.284	2.926	2.647	2.469	2.037	1.704	1.374	Y	4
1.019	.610	0.000								Y	4
-.559	-.508	-.432	-.305	-.178	-.051	.076	.102	.229	.366	Z	4
1.935	2.062	2.139	2.164	2.240	2.367	2.748	4.072	5.192	6.236	Z	4
6.744	7.026	7.127								Z	4
0.000	.688	1.247	1.781	2.342	2.875	3.104	3.335	3.792	4.275	Y	5
4.275	4.021	3.741	3.437	2.951	2.697	2.469	2.037	1.679	1.349	Y	5
1.044	.508	0.000								Y	5
-.790	-.739	-.663	-.559	-.432	-.305	-.229	-.152	-.051	.051	Z	5
2.037	2.062	2.088	2.113	2.113	2.215	2.494	3.863	5.014	5.931	Z	5
6.388	6.693	6.795								Z	5
0.000	.739	1.323	1.882	2.418	2.951	3.208	3.462	3.894	4.249	Y	6
4.249	4.021	3.792	3.487	3.078	2.697	2.418	2.012	1.679	1.323	Y	6
.968	.508	0.000								Y	6
-1.403	-1.603	-1.577	-1.527	-1.476	-1.400	-1.349	-1.298	-1.222	-1.120	Z	6
1.273	1.247	1.247	1.196	1.196	1.247	1.501	2.545	3.665	4.760	Z	6
5.166	5.446	5.547								Z	6
0.000	.610	1.146	1.730	2.342	2.850	3.078	3.360	3.818	4.249	Y	7
4.275	3.970	3.716	3.411	3.129	2.748	2.443	2.037	1.679	1.323	Y	7
1.019	.584	0.000								Y	7
-1.374	-1.374	-1.374	-1.323	-1.273	-1.247	-1.196	-1.196	-1.095	-1.044	Z	7
.790	.739	.714	.663	.638	.714	.968	2.012	3.259	4.275	Z	7
4.735	5.039	5.116								Z	7
0.000	.663	1.250	1.885	2.443	2.979	3.157	3.310	3.767	4.328	Y	8
4.326	4.072	3.792	3.513	3.231	2.875	2.545	2.111	1.727	1.344	Y	8
1.011	.579	0.000								Y	8
-1.171	-1.171	-1.168	-1.118	-1.092	-1.039	-.988	-.988	-.912	-.808	Z	8
.541	.516	.462	.411	.386	.411	.665	1.732	3.030	4.176	Z	8
4.582	4.887	4.963								Z	8
0.000	.686	1.295	1.857	2.365	2.875	3.104	3.358	3.843	4.275	Y	9
4.277	3.995	3.716	3.411	3.183	2.901	2.621	2.116	1.709	1.356	Y	9
1.001	.594	0.000								Y	9
-.942	-.917	-.869	-.843	-.818	-.767	-.719	-.693	-.592	-.541	Z	9
.325	.274	.224	.173	.122	.122	.378	1.524	2.873	4.044	Z	9
4.478	4.757	4.862								Z	9
0.000	.688	1.247	1.931	2.418	2.926	3.129	3.310	3.792	4.249	Y	10
4.249	3.945	3.691	3.411	3.129	2.799	2.570	2.088	1.704	1.273	Y	10
.942	.508	0.000								Y	10
-.815	-.790	-.765	-.714	-.610	-.559	-.457	-.457	-.356	-.254	Z	10
-.076	-.152	-.178	-.254	-.305	-.203	.076	1.450	2.723	3.970	Z	10
4.402	4.658	4.760								Z	10
0.000	.584	1.092	1.654	2.238	2.850	3.002	3.231	3.792	4.326	Y	11
4.326	3.995	3.665	3.307	2.951	2.875	2.748	2.268	1.811	1.407	Y	11
1.077	.645	0.000								Y	11
-.790	-.765	-.739	-.716	-.640	-.513	-.490	-.439	-.312	-.211	Z	11
-.711	-.262	-.338	-.414	-.462	-.361	-.183	1.166	2.517	3.891	Z	11
4.326	4.630	4.785								Z	11
131.295	137.160	142.837								XFIIS	9
0.000	.561	1.069	1.631	2.215	2.802	2.954	2.824	2.672	2.263	Y	1
1.981	1.676	1.344	1.036	.655	0.000					Y	1
-.765	-.787	-.762	-.711	-.632	-.505	-.480	-.328	-.147	1.072	Z	1
1.963	2.827	3.871	4.328	4.633	4.760					Z	1
0.000	.561	1.021	1.580	2.113	2.527	2.675	2.672	2.545	2.238	Y	2
1.956	1.674	1.288	1.008	.574	0.000					Y	2
-.765	-.737	-.762	-.683	-.630	-.554	-.452	-.274	.135	1.024	Z	2
1.949	2.931	3.922	4.354	4.658	4.785					Z	2
0.000	.584	1.041	1.527	1.984	2.365	2.570	2.621	2.570	2.217	Y	3
1.958	1.654	1.323	1.016	.610	0.000					Y	3
-.714	-.663	-.663	-.663	-.610	-.559	-.432	-.203	.127	1.044	Z	3
1.961	2.875	3.919	4.376	4.658	4.760					Z	3
111.597	9.065	-2.858								P000RG	
0.000	7.620	15.240	25.603							XPD00	
2.096	2.266	2.436	2.667							P000R	
121.836	20.881	.254	19.784	135.295	24.232	9.462	6.335			FIN00R	
0.0	10	20	30	40	50	60	80	90	100	XFIN	
0.0	.519	.819	1.039	1.161	1.203	1.161	.819	.519	0.0	FORN	1 1

TABLE II.- Continued

(b) U.S. Customary Units. All linear dimensions are in inches

SUPERSONIC CRUISE VEHICLE (MEASURED COORDINATES)																	
1	1	1	1	1	13	26	3	22	15	23	11	16	3	1	4	1	10
343.																	
0.0	.50	75		1.25	2.50	5.0	7.5	10.	15.	20.							XAF 10
75.	30.	35.		40.	45.	50.	55.	60.	65.	70							XAF 20
75.	80.	85		90.	95.	100											XAF 26
22.141	1.6851	-7.5		29.550													WDRG 2
24.905	2.2512	-7.5		26.786													WDRG 3
27.416	2.8093	-7.5		24.275													WDRG 4
29.765	3.3726	-7.5		21.974													WDRG 5
33.888	4.4445	-7.5		17.814													WDRG 6
36.174	5.0576	-7.5		15.795													WDRG 7
40.353	6.1828	-7.5		12.128													WDRG 8
44.562	7.3058	-7.5		8.433													WDRG 9
47.935	8.2721	-7.5		5.474													WDRG 10
48.318	8.4216	-7.5		5.184													WDRG 11
49.319	8.9922	-7.5		4.446													WDRG 12
51.229	10.101	-7.5		3.046													WDRG 13
53.194	11.239	-7.5		1.587													WDRG 14
7.8260	7.8590	7.8635	7.8680	7.8885	7.9235	7.9475	7.9545	7.9390	7.9090								Z 2
7.8620	7.8010	7.7360	7.6770	7.6180	7.5715	7.5305	7.4955	7.4715	7.4585								Z 2
7.4520	7.4520	7.4540	7.4545	7.4555	7.4535												Z 2
7.7910	7.8045	7.8085	7.8155	7.8340	7.8695	7.8930	7.9025	7.8965	7.8745								Z 3
7.8350	7.7880	7.7370	7.6920	7.6465	7.6090	7.5755	7.5485	7.5305	7.5220								Z 3
7.5250	7.5295	7.5410	7.5545	7.5630	7.5685												Z 3
7.7250	7.7430	7.7460	7.7525	7.7725	7.8090	7.8355	7.8535	7.8575	7.8405								Z 4
7.8110	7.7770	7.7380	7.7055	7.6720	7.6400	7.6115	7.5880	7.5705	7.5615								Z 4
7.5610	7.5655	7.5755	7.5850	7.5925	7.5975												Z 4
7.6700	7.6805	7.6850	7.6925	7.7125	7.7520	7.7820	7.8005	7.8130	7.8090								Z 5
7.7915	7.7690	7.7430	7.7180	7.6930	7.6660	7.6430	7.6270	7.6145	7.6075								Z 5
7.6015	7.5960	7.5910	7.5855	7.5800	7.5770												Z 5
7.5645	7.5755	7.5785	7.5870	7.6075	7.6445	7.6765	7.7000	7.7310	7.7460								Z 6
7.7510	7.7480	7.7405	7.7315	7.7205	7.7090	7.6990	7.6895	7.6850	7.6850								Z 6
7.6870	7.6880	7.6865	7.6840	7.6780	7.6725												Z 6
7.5160	7.5240	7.5280	7.5360	7.5545	7.5915	7.6230	7.6490	7.6880	7.7100								Z 7
7.7250	7.7310	7.7310	7.7300	7.7265	7.7215	7.7170	7.7140	7.7125	7.7145								Z 7
7.7180	7.7230	7.7290	7.7300	7.7295	7.7260												Z 7
7.4390	7.4540	7.4580	7.4650	7.4815	7.5135	7.5450	7.5710	7.6120	7.6440								Z 8
7.6675	7.6855	7.6985	7.7095	7.7190	7.7255	7.7330	7.7405	7.7480	7.7580								Z 8
7.7650	7.7705	7.7780	7.7825	7.7885	7.7930												Z 8
7.4230	7.4320	7.4345	7.4385	7.4500	7.4720	7.4940	7.5150	7.5500	7.5805								Z 9
7.6070	7.6330	7.6570	7.6750	7.6945	7.7125	7.7285	7.7430	7.7575	7.7680								Z 9
7.7790	7.7890	7.7960	7.8080	7.8190	7.8260												Z 9
7.4390	7.4480	7.4505	7.4540	7.4625	7.4760	7.4895	7.5020	7.5260	7.5475								Z 10
7.5695	7.5905	7.6110	7.6310	7.6525	7.6690	7.6825	7.6955	7.7105	7.7250								Z 10
7.7385	7.7510	7.7630	7.7735	7.7830	7.7925												Z 10
7.4560	7.4615	7.4635	7.4660	7.4720	7.4830	7.4935	7.5025	7.5210	7.5390								Z 11
7.5565	7.5740	7.5930	7.6115	7.6290	7.6455	7.6605	7.6755	7.6910	7.7060								Z 11
7.7200	7.7340	7.7465	7.7585	7.7690	7.7790												Z 11
7.5030	7.5050	7.5060	7.5070	7.5100	7.5150	7.5205	7.5260	7.5375	7.5480								Z 12
7.5595	7.5710	7.5830	7.5960	7.6080	7.6195	7.6325	7.6455	7.6585	7.6705								Z 12
7.6835	7.6950	7.7060	7.7160	7.7255	7.7340												Z 12
7.5535	7.5550	7.5560	7.5580	7.5610	7.5635	7.5655	7.5675	7.5720	7.5760								Z 13
7.5810	7.5855	7.5905	7.5960	7.6010	7.6060	7.6110	7.6160	7.6210	7.6250								Z 13
7.6290	7.6335	7.6365	7.6395	7.6430	7.6465												Z 13
7.5515	7.5520	7.5520	7.5530	7.5540	7.5545	7.5550	7.5555	7.5560	7.5565								Z 14
7.5575	7.5590	7.5590	7.5595	7.5595	7.5595	7.5595	7.5590	7.5590	7.5590								Z 14
7.5590	7.5585	7.5585	7.5580	7.5585	7.5630												Z 14
0.0	.2415	.2930	.3675	.5205	.7085	.8510	.9765	1.1750	1.3190								Z 2
1.4285	1.5075	1.5570	1.5830	1.5915	1.6030	1.5920	1.5655	1.4655	1.3430								Z 2
1.1945	1.0180	.8120	.5730	.3010	0.0												Z 2
0.0	.2355	.2885	.3735	.5145	.7025	.8490	.9715	1.1655	1.3050								Z 3
1.4160	1.4950	1.5455	1.5710	1.5835	1.5935	1.5820	1.5355	1.4545	1.3170								Z 3
1.1805	1.0115	.8045	.5670	.2970	0.0												Z 3
0.0	.2310	.2865	.3625	.5000	.6935	.8395	.9470	1.1380	1.2835								Z 4
1.3920	1.4700	1.5190	1.5460	1.5575	1.5595	1.5510	1.5110	1.4170	1.2975								Z 4
1.1655	.9930	.7915	.5585	.2930	0.0												Z 4
0.0	.2255	.2790	.3555	.4875	.6655	.8045	.9215	1.1160	1.2520								Z 5
1.3575	1.4350	1.4850	1.5105	1.5205	1.5210	1.5070	1.4575	1.3780	1.2740								Z 5
1.1390	.9730	.7765	.5455	.2875	0.000												Z 5
0.0	.2245	.2710	.3420	.4665	.6560	.7960	.9005	1.0720	1.1925								Z 6
1.2895	1.3625	1.4115	1.4365	1.4490	1.4500	1.4290	1.3870	1.3150	1.2160								Z 6
1.0855	.9265	.7390	.5205	.2750	0.0												Z 6
0.0	.2140	.2600	.3315	.4595	.6285	.7640	.8715	1.0470	1.1630								Z 7
1.2535	1.3240	1.3745	1.4030	1.4145	1.4155	1.3945	1.3495	1.2805	1.1860								Z 7
1.0605	.9020	.6995	.5020	.2645	0.0												Z 7
0.0	.1685	.2275	.3090	.4430	.6170	.7350	.8480	1.0240	1.1515								Z 8
1.2515	1.3200	1.3580	1.3815	1.3925	1.3865	1.3670	1.3260	1.2545	1.1565								Z 8
1.0335	.8665	.6830	.4920	.2625	0.0												Z 8
0.0	.2165	.2600	.3305	.4450	.6240	.7490	.8510	1.0285	1.1630								Z 9
1.2695	1.3290	1.3490	1.3935	1.3935	1.3855	1.3565	1.3040	1.2380	1.1365								Z 9
1.0130	.8435	.6390	.4735	.2600	0.0												Z 9
0.0	.1675	.2135	.2715	.3845	.5190	.6310	.7440	.9315	1.0895								Z 10
1.2295	1.3440	1.4335	1.4865	1.5505	1.5690	1.4875	1.4090	1.3500	1.2470								Z 10
1.1265	.9855	.8125	.6035	.3605	0.0												Z 10
0.0	.1550	.1895	.2335	.3270	.4545	.5560	.6660	.8165	.9665								Z 11
1.1035	1.2225	1.3145	1.3735	1.4070	1.4210	1.4095	1.3695	1.3050	1.2170								Z 11
1.1095	.9800	.8320	.6480	.4330	0.0												Z 11

TABLE II.- Continued

(b) Continued

9985	1.0930	1.1695	1.2235	1.2525	1.2645	1.2505	1.2165	1.1800	1.1145	T 13
1.0290	.9220	.7975	.6510	.4825	0.0					T 13
0.0	.1205	.1805	.2970	.4245	.5215	.6285	.7255	.8840	1.0230	T 14
1.1085	1.1420	1.1940	1.2335	1.2515	1.2630	1.2660	1.2455	1.2150	1.1700	T 14
1.1185	1.0640	.9855	.8895	.7270	0.0					T 14
5.780	6.131	6.850	7.151	7.781	8.400	9.820	11.251	13.350	16.331	XFUS 10
18.751	19.600	20.485	21.494	22.501						XFUS 15
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Y 1
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Y 1
0.000	0.000									Y 1
.951	.951	.951	.951	.951	.951	.951	.951	.951	.951	Z 1
.951	.951	.951	.951	.951	.951	.951	.951	.951	.951	Z 1
.951	.951									Z 1
0.000	.017	.037	.037	.047	.047	.057	.057	.057	.057	Y 2
.057	.057	.057	.057	.058	.058	.058	.048	.048	.038	Y 2
.008	0.000									Y 2
.911	.911	.911	.911	.921	.921	.921	.921	.921	.921	Z 2
.921	.921	.921	.931	.941	.941	.951	.961	.971	1.001	Z 2
1.011	1.011									Z 2
0.000	.027	.057	.077	.107	.137	.157	.177	.197	.197	Y 3
.197	.197	.197	.197	.187	.178	.168	.148	.128	.099	Y 3
.039	0.000									Y 3
.861	.871	.871	.870	.870	.870	.870	.870	.890	.890	Z 3
.890	.890	.890	.920	.940	.970	1.000	1.030	1.070	1.101	Z 3
1.131	1.142									Z 3
0.000	.017	.067	.107	.137	.187	.217	.219	.240	.240	Y 4
.240	.240	.240	.238	.234	.228	.218	.209	.149	.150	Y 4
.070	0.000									Y 4
.841	.841	.851	.840	.840	.850	.859	.859	.879	.879	Z 4
.879	.879	.869	.889	.909	.939	.979	1.010	1.050	1.120	Z 4
1.181	1.202									Z 4
0.000	.075	.135	.175	.235	.295	.346	.353	.358	.353	Y 5
.353	.342	.339	.329	.324	.313	.297	.287	.277	.218	Y 5
.118	0.000									Y 5
.791	.791	.790	.800	.800	.799	.809	.819	.828	.848	Z 5
.848	.878	.889	.929	.949	.989	1.039	1.070	1.130	1.210	Z 5
1.281	1.302									Z 5
0.000	.098	.178	.258	.318	.378	.440	.460	.449	.466	Y 6
.463	.454	.449	.443	.430	.420	.411	.391	.372	.283	Y 6
.174	0.000									Y 6
.751	.750	.749	.748	.758	.757	.766	.776	.796	.815	Z 6
.806	.846	.866	.886	.927	.967	1.007	1.057	1.128	1.269	Z 6
1.360	1.412									Z 6
0.000	.154	.244	.335	.445	.545	.614	.639	.630	.636	Y 7
.636	.629	.619	.612	.609	.593	.567	.518	.440	.340	Y 7
.201	0.000									Y 7
.651	.650	.649	.649	.658	.667	.677	.706	.716	.736	Z 7
.736	.766	.806	.827	.847	.907	.998	1.178	1.389	1.520	Z 7
1.621	1.652									Z 7
0.000	.154	.265	.375	.515	.635	.756	.781	.789	.782	Y 8
.782	.774	.764	.761	.747	.728	.679	.601	.503	.374	Y 8
.224	0.000									Y 8
.571	.570	.579	.578	.597	.606	.635	.654	.674	.693	Z 8
.693	.724	.754	.765	.805	.886	1.046	1.307	1.608	1.769	Z 8
1.871	1.902									Z 8
0.000	.193	.343	.494	.654	.794	.890	.910	.911	.910	Y 9
.908	.901	.890	.880	.886	.854	.768	.621	.493	.304	Y 9
.215	0.000									Y 9
.440	.439	.448	.457	.486	.505	.535	.554	.573	.593	Z 9
.603	.623	.664	.684	.705	.785	1.116	1.548	1.899	2.030	Z 9
2.151	2.183									Z 9
0.000	.202	.393	.583	.774	.984	1.052	1.059	1.059	1.052	Y 10
1.048	1.043	1.041	1.039	1.032	1.006	.850	.644	.536	.417	Y 10
.218	0.000									Y 10
.300	.309	.318	.346	.365	.414	.443	.462	.482	.501	Z 10
.521	.532	.542	.553	.573	.664	1.206	1.858	2.199	2.380	Z 10
2.502	2.563									Z 10
0.000	.210	.380	.591	.831	1.051	1.174	1.186	1.190	1.189	Y 11
1.189	1.181	1.169	1.161	1.140	1.091	.871	.701	.531	.400	Y 11
.220	0.000									Y 11
.170	.170	.180	.200	.230	.280	.310	.330	.340	.340	Z 11
.380	.411	.451	.471	.551	.681	1.372	1.982	2.473	2.663	Z 11
2.773	2.823									Z 11
0.000	.170	.320	.521	.781	1.021	1.131	1.220	1.236	1.239	Y 12
1.239	1.210	1.189	1.161	1.131	1.081	.841	.671	.521	.431	Y 12
.230	0.000									Y 12
.140	.130	.130	.160	.190	.240	.260	.290	.310	.330	Z 12
.330	.411	.471	.551	.641	.761	1.522	2.103	2.543	2.713	Z 12
2.843	2.894									Z 12
0.000	.250	.441	.611	.781	.992	1.152	1.282	1.352	1.365	Y 13
1.365	1.340	1.285	1.213	1.143	1.063	.834	.665	.515	.405	Y 13
.225	0.000									Y 13
.090	.090	.109	.129	.149	.199	.238	.258	.288	.318	Z 13
.318	.428	.518	.619	.719	.829	1.601	2.162	2.602	2.783	Z 13
2.893	2.944									Z 13
0.000	.270	.471	.661	.841	1.041	1.211	1.382	1.552	1.582	Y 14
1.582	1.522	1.412	1.242	1.121	1.041	.831	.661	.521	.411	Y 14
.230	0.000									Y 14
.010	.020	.050	.080	.120	.170	.220	.240	.270	.330	Z 14
.320	.471	.581	.691	.791	.911	1.642	2.193	2.613	2.763	Z 14
2.904	2.944									Z 14
0.000	.240	.451	.651	.851	1.061	1.232	1.432	1.582	1.692	Y 15

TABLE II.- Concluded

(b) Concluded

1.692	1.562	1.472	1.312	1.131	1.041	.871	.701	.521	.421	Y	15
.260	0.0									Y	15
-.030	-.020	-.010	.030	.080	.150	.190	.230	.230	.260	Z	15
.481	.581	.671	.751	.821	.991	1.512	2.022	2.423	2.753	Z	15
2.884	2.934									Z	15
22.501	23.701	24.901	25.851	27.791	38.291	44.291	46.541	48.790	51.251	XFHS	10
51.691										XFHS	11
0.0	.240	.461	.641	.832	1.062	1.232	1.433	1.583	1.693	Y	1
1.693	1.613	1.523	1.413	1.232	1.102	1.032	.862	.701	.521	Y	1
.431	.261	0.000								Y	1
-.030	-.020	-.010	.030	.070	.140	.190	.220	.230	.261	Z	1
.481	.541	.621	.691	.792	.862	.982	1.503	2.034	2.425	Z	1
2.756	2.886	2.946								Z	1
.000	.291	.541	.762	.942	1.132	1.202	1.282	1.523	1.703	Y	2
1.702	1.582	1.461	1.311	1.151	1.070	1.020	.869	.718	.526	Y	2
.395	.215	0.0								Y	2
-.090	-.080	-.039	.001	.062	.122	.153	.153	.213	.224	Z	2
.645	.715	.764	.814	.864	.944	1.034	1.495	2.005	2.576	Z	2
2.756	2.886	2.926								Z	2
0.000	.301	.551	.752	.942	1.112	1.222	1.333	1.533	1.693	Y	3
1.683	1.563	1.433	1.303	1.132	1.072	1.012	.842	.701	.541	Y	3
.421	.240	0.000								Y	3
-.150	-.140	-.100	-.050	-.010	.060	.090	.110	.160	.190	Z	3
.752	.792	.822	.842	.882	.952	1.062	1.583	2.014	2.505	Z	3
2.705	2.826	2.876								Z	3
0.0	.291	.511	.731	.932	1.112	1.222	1.303	1.503	1.693	Y	4
1.683	1.533	1.413	1.293	1.152	1.042	.972	.802	.671	.541	Y	4
.401	.24	0.0								Y	4
-.220	-.200	-.170	-.120	-.070	-.020	.030	.040	.090	.140	Z	4
.762	.812	.842	.852	.882	.932	1.082	1.603	2.044	2.455	Z	4
2.655	2.766	2.806								Z	4
0.000	.271	.491	.701	.922	1.132	1.222	1.313	1.493	1.683	Y	5
1.683	1.583	1.473	1.353	1.162	1.062	.972	.802	.661	.531	Y	5
.411	.200	0.0								Y	5
-.311	-.291	-.261	-.220	-.170	-.120	-.090	-.040	-.020	.020	Z	5
.802	.812	.822	.832	.832	.872	.982	1.513	1.974	2.335	Z	5
2.515	2.635	2.675								Z	5
0.0	.291	.521	.741	.952	1.162	1.263	1.363	1.533	1.673	Y	6
1.673	1.583	1.493	1.373	1.212	1.062	.952	.792	.661	.521	Y	6
.381	.200	0.000								Y	6
-.631	-.631	-.621	-.601	-.581	-.551	-.531	-.511	-.481	-.441	Z	6
.501	.491	.491	.471	.471	.491	.591	1.002	1.443	1.874	Z	6
2.034	2.144	2.184								Z	6
0.000	.240	.451	.681	.922	1.172	1.212	1.323	1.503	1.673	Y	7
1.683	1.563	1.463	1.343	1.232	1.082	.962	.802	.661	.521	Y	7
.401	.230	0.0								Y	7
-.541	-.541	-.541	-.521	-.501	-.491	-.471	-.471	-.431	-.411	Z	7
.311	.291	.281	.261	.251	.281	.381	.792	1.283	1.683	Z	7
1.864	1.984	2.014								Z	7
0.0	.261	.492	.742	.962	1.173	1.243	1.303	1.483	1.704	Y	8
1.703	1.603	1.493	1.383	1.272	1.132	1.002	.831	.680	.529	Y	8
.398	.228	0.0								Y	8
-.441	-.461	-.460	-.440	-.430	-.409	-.389	-.389	-.359	-.318	Z	8
.213	.203	.182	.162	.152	.162	.262	.682	1.193	1.644	Z	8
1.804	1.924	1.954								Z	8
0.0	.270	.510	.731	.931	1.132	1.222	1.322	1.513	1.683	Y	9
1.684	1.573	1.463	1.343	1.253	1.142	1.032	.833	.673	.534	Y	9
.394	.234	0.0								Y	9
-.371	-.361	-.342	-.332	-.322	-.302	-.283	-.273	-.233	-.213	Z	9
.178	.108	.088	.068	.048	.048	.149	.600	1.131	1.592	Z	9
1.763	1.873	1.914								Z	9
0.0	.271	.491	.721	.952	1.152	1.232	1.303	1.493	1.673	Y	10
1.673	1.553	1.453	1.343	1.232	1.102	1.012	.822	.671	.501	Y	10
.371	.200	0.0								Y	10
-.321	-.311	-.301	-.281	-.240	-.220	-.180	-.180	-.140	-.100	Z	10
-.030	-.060	-.070	-.100	-.120	-.080	.030	.571	1.072	1.563	Z	10
1.733	1.834	1.874								Z	10
0.0	.230	.430	.651	.891	1.122	1.182	1.272	1.493	1.703	Y	11
1.703	1.573	1.443	1.302	1.162	1.132	1.082	.893	.713	.554	Y	11
.424	.254	0.0								Y	11
-.311	-.301	-.291	-.282	-.252	-.202	-.193	-.173	-.123	-.083	Z	11
-.083	-.103	-.133	-.163	-.182	-.142	-.072	.459	.991	1.532	Z	11
1.703	1.823	1.884								Z	11
51.691	54.000	56.235								XFHS	11
.000	.221	.421	.642	.872	1.103	1.163	1.112	1.052	.891	Y	1
.780	.660	.529	.408	.258	0.0					Y	1
-.301	-.310	-.300	-.280	-.249	-.199	-.189	-.129	-.058	.422	Z	1
.773	1.113	1.524	1.704	1.874	1.874					Z	1
0.0	.221	.402	.622	.832	.993	1.053	1.052	1.002	.881	Y	2
.770	.659	.507	.397	.276	0.0					Y	2
-.301	-.290	-.300	-.269	-.248	-.218	-.178	-.108	.053	.403	Z	2
.783	1.154	1.544	1.714	1.834	1.884					Z	2
0.0	.23	.41	.601	.781	.931	1.012	1.032	1.012	.871	Y	3
.771	.651	.521	.400	.240	0.0					Y	3
-.281	-.261	-.261	-.261	-.240	-.220	-.170	-.080	.050	.411	Z	3
.772	1.132	1.543	1.723	1.834	1.874					Z	3
43.936	3.569	-1.125								XXXXXXXX	
0.0	.30	.60	10.08							XXXX	
.875	.892	.959	1.05							XXXX	
47.967	8.221	.10	7.789	53.262	9.54	3.725	2.494			XXXXXXXX	
0.0	.10	.20	30	40	50	60	80	90	100	XFHS	
0.0	.519	.819	1.039	1.161	1.203	1.161	.819	.519	0.0	XXXX	1 1

TABLE III - COORDINATES OF ORIFICES ON MODEL

Model station, x, cm (in), of -																										
49 213 (19 375)		59 373 (23 375)		69 533 (27 375)		74 534 (29 344)		79 535 (31 313)		84 773 (33 375)		90 013 (35 438)		96 916 (38 156)		103 823 (40 875)		119 063 (46 875)								
N	y, cm (in)	N	y, cm (in)	N	y, cm (in)	N	y, cm (in)	N	y, cm (in)	N	y, cm (in)	N	y, cm (in)	N	y, cm (in)	N	y, cm (in)	N	y, cm (in)							
Upper surface																										
86	0 000 (0 000)	87	0 000 (0 000)	88	0 000 (0 000)	7	5 664 (2 230)	13	4 338 (1 708)	20	6 960 (2 740)	26	4 892 (1 926)	34	8 585 (3 380)	95	0 000 (0 000)	49	6 467 (2 546)							
	1		4 115 (1 620)		8		6 187 (2 436)		14		5 629 (2 216)		21		7 742 (3 048)		27		6 736 (2 652)	35	9 693 (3 816)	40	5 080 (2 000)	50	9 883 (3 891)	
	2		4 877 (1 920)		9		6 711 (2 642)		15		6 596 (2 597)		22		8 524 (3 356)		28		8 118 (3 196)	36	10 800 (4 252)	41	8 219 (3 236)	51	11 593 (4 564)	
	3		5 690 (2 240)		10		7 234 (2 848)		16		7 242 (2 851)		23		9 307 (3 664)		29		9 040 (3 559)	37	11 908 (4 688)	42	9 512 (3 745)	52	13 302 (5 237)	
	4		6 096 (2 400)		11		7 757 (3 054)		17		7 887 (3 105)		24		10 089 (3 972)		30		9 962 (3 922)	38	13 015 (5 124)	43	10 805 (4 254)	53	14 155 (5 573)	
	5		6 502 (2 560)		12		8 019 (3 157)		18		8 532 (3 359)		25		10 480 (4 126)		31		10 884 (4 285)	39	13 569 (5 342)	44	12 098 (4 763)	54	15 011 (5 910)	
	6		6 909 (2 720)		19		9 177 (3 613)		32		11 806 (4 648)		33		12 037 (4 739)		45		12 743 (5 017)	46	14 036 (5 526)	55	15 865 (6 246)			
																						47	15 329 (6 035)	56	16 721 (6 583)	
																							48	15 651 (6 162)	57	17 574 (6 919)
																		59	19 284 (7 592)							
																		60	19 710 (7 760)							
Lower surface																										
				61	4 064 (1 600)			65	4 338 (1 708)			69	4 892 (1 926)			74	5 080 (2 000)	79	6 467 (2 546)							
				62	4 877 (1 920)			66	6 596 (2 597)			70	6 736 (2 652)			75	9 512 (3 745)	80	9 883 (3 891)							
				63	6 096 (2 400)			67	7 887 (3 105)			71	9 040 (3 559)			76	12 098 (4 763)	81	13 302 (5 237)							
				64	6 909 (2 720)			68	9 177 (3 613)			72	10 884 (4 285)			77	14 036 (5 526)	82	15 011 (5 910)							
												73	12 037 (4 739)			78	15 651 (6 162)	83	16 721 (6 583)							
																		85	19 710 (7 760)							

TABLE IV.- SPANWISE DISTRIBUTION OF SURFACE PRESSURES

MACH NO. = 2.300 ALPHA = -4.16

[illegible]

TABLE IV.- Continued

MACH NO. = 2.300 ALPHA = -2.18

[illegible]

TABLE IV.- Continued

MACH NO. = 2.300 ALPHA = -1.18

MODEL STATION, X																							
49.213 (19.375)		59.373 (23.375)		69.533 (27.375)		74.534 (29.344)		79.535 (31.313)		84.773 (33.375)		90.013 (35.438)		96.916 (38.156)		103.823 (40.875)		119.063 (46.875)					
UPPER SURFACE																							
N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP				
86	-.0981	87	-.0060	88	-.0293	7	-.0994	89	-.0012	20	-.0382	94	-.0303	34	-.0164	95	-.0111	49	-.0940				
				1	-.0088			13	-.0221			26	-.0068			40	.0260			50	-.0022		
				2	-.0301			14	-.0297			27	-.0103			35	-.0210			41	-.0017	51	-.0076
				3	-.0261			15	-.0370			28	-.0209			36	-.0198			42	-.0036	52	-.0066
				4	-.0169			16	-.0386			29	-.0294			37	-.0051			43	-.0066	53	-.0038
				5	-.0080			17	-.0374			30	-.0356			38	.0226			44	-.0145	54	-.0150
				6	.0065			18	-.0297			31	-.0342			39	-.0967			45	-.0176	55	-.0110
								19	-.0088			32	-.0245							46	-.0221	56	-.0079
												33	.0172							47	-.0160	57	-.0578
																				48	.0161	58	-.0091
																						59	.0015
																						60	.0155
LOWER SURFACE																							
				N	CP			N	CP			N	CP			N	CP	N	CP				
				61	.0077			65	.0073			69	-.0028			74	-.0100	79	.0277				
				62	-.0020			66	.0016			70	.0026			75	-.0020	80	.0258				
				63	-.0189			67	-.0406			71	-.0249			76	-.0145	81	.0115				
				64	.0415			68	.0306			72	-.0458			77	-.0539	82	-.0359				
												73	.0598			78	.0494	83	-.0709				
																		85	.0321				

TABLE IV.- Continued

MACH NO. = 2.300 ALPHA = -.18

[illegible]

TABLE IV.- Continued

MACH NO. = 2.300 ALPHA = .82

MODEL STATION, X																			
49.213 (19.375)		59.373 (23.375)		69.533 (27.375)		74.534 (29.344)		79.535 (31.313)		84.773 (33.375)		90.013 (35.438)		96.916 (38.156)		103.823 (40.875)		119.063 (46.875)	
UPPER SURFACE																			
N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP
86	-.0974	87	-.0113	88	-.0258			89	.0160			94	-.0534			95	-.0313	49	-.0943
				1	-.0150	7	-.0982	13	-.0339	20	-.0636	26	-.0175	34	-.0408	40	.0084	50	-.0217
				2	-.0463	8	-.0556	14	-.0447	21	-.0716	27	-.0273	35	-.0506	41	-.0181	51	-.0251
				3	-.0479	9	-.0574	15	-.0536	22	-.0640	28	-.0375	36	-.0653	42	-.0215	52	-.0276
				4	-.0447	10	-.0556	16	-.0632	23	-.0392	29	-.0534	37	-.0525	43	-.0294	53	-.0273
				5	-.0367	11	-.0419	17	-.0677	24	-.0148	30	-.0623	38	-.0237	44	-.0370	54	-.0382
				6	-.0226	12	-.0175	18	-.0632	25	.0002	31	-.0694	39	-.0960	45	-.0506	55	-.0392
								19	-.0431			32	-.0663			46	-.0570	56	-.0392
												33	-.0211			47	-.0646	57	-.0825
																48	-.0324	58	-.0354
																		59	-.0519
																		60	-.0314
LOWER SURFACE																			
				N	CP			N	CP			N	CP			N	CP	N	CP
				61	.0289			65	.0285			69	.0179			74	.0054	79	.0297
				62	.0305			66	.0261			70	.0224			75	.0179	80	.0319
				63	.0289			67	.0220			71	.0268			76	.0285	81	.0322
				64	.0076			68	-.0033			72	-.0024			77	.0073	82	-.0055
												73	.0188			78	.0054	83	-.0042
																		85	-.0170

TABLE IV.- Continued

MACH NO. = 2.300 ALPHA = 1.82

[illegible]

TABLE IV.- Continued

MACH NO. = 2.300 ALPHA = 2.81

MODEL STATION, X																			
49.213 (19.375)		59.373 (23.375)		69.533 (27.375)		74.534 (29.344)		79.535 (31.313)		84.773 (33.375)		90.013 (35.438)		96.916 (38.156)		103.823 (40.875)		119.063 (46.875)	
UPPER SURFACE																			
N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP		
86	-.0995	87	-.0136	88	-.0253	7	-.1009	89	.0353	20	-.0916	94	-.0752	34	-.0644	95	-.0538	49	-.0961
				1	-.0213			13	-.0489			26	-.0288			40	-.0119		
				2	-.0638			14	-.0586			27	-.0438			41	-.0346		
				3	-.0690			15	-.0718			28	-.0566			42	-.0414		
				4	-.0746			16	-.0899			29	-.0752			43	-.0497		
				5	-.0702			17	-.0987			30	-.0942			44	-.0617		
				6	-.0546			18	-.1007			31	-.1141			45	-.0825		
								19	-.0875			32	-.1159			46	-.0980		
												33	-.0717			47	-.1304		
																48	-.0934		
LOWER SURFACE																			
				N	CP			N	CP			N	CP			N	CP		
				61	.0481			65	.0502			69	.0384			74	.0243		
				62	.0530			66	.0498			70	.0446			75	.0371		
				63	.0606			67	.0642			71	.0499			76	.0530		
				64	-.0437			68	-.0517			72	.0260			77	.0715		
												73	-.0491			78	-.0670		
																83	.0454		
																85	-.0898		

TABLE IV.- Continued

MACH NO. = 2.300 ALPHA = 3.81

[illegible]

TABLE IV.- Continued

MACH NO. = 2.300 ALPHA = 4.82

MODEL STATION, X																					
49.213 (19.375)		59.373 (23.375)		69.533 (27.375)		74.534 (29.344)		79.535 (31.313)		84.773 (33.375)		90.013 (35.438)		96.916 (38.156)		103.823 (40.875)		119.063 (46.875)			
UPPER SURFACE																					
N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP		
86	-.0998	87	-.0172	88	-.0236	7	-.1002	89	.0562	20	-.1139	94	-.0932	34	-.0975	95	-.0764	49	-.0957		
				1	-.0276			13	-.0661			26	-.0393			40	-.0232			50	-.0538
				2	-.0769			14	-.0765			27	-.0640			41	-.0503			51	-.0628
				3	-.0857			15	-.0909			28	-.0799			42	-.0654			52	-.0774
				4	-.0994			16	-.1114			29	-.0967			43	-.0786			53	-.0817
				5	-.1050			17	-.1306			30	-.1281			44	-.0941			54	-.1153
				6	-.0970			18	-.1411			31	-.1541			45	-.1163			55	-.1106
								19	-.1298			32	-.1608			46	-.1360			56	-.1116
												33	-.1458			47	-.1635			57	-.1321
																48	-.1616			58	-.1234

TABLE IV.- Continued

MACH NO. = 2.300 ALPHA = 5.81

[illegible]

TABLE IV.- Continued

MACH NO. = 2.300 ALPHA = 7.82

MODEL STATION, X																			
49.213 (19.375)		59.373 (23.375)		69.533 (27.375)		74.534 (29.344)		79.535 (31.313)		84.773 (33.375)		90.013 (35.438)		96.916 (38.156)		103.823 (40.875)		119.063 (46.875)	
UPPER SURFACE																			
M	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP
86	-.0989	87	-.0182	88	-.0238	7	-.1002	89	.0885	20	-.1620	94	-.1612	34	-.1631	95	-.1646	49	-.0956
				1	-.0379			13	-.0924			26	-.0577			40	-.0348		
				2	-.1077			14	-.1229			27	-.1262			41	-.0491		
				3	-.1354			15	-.1510			28	-.1607			42	-.1687		
				4	-.1498			16	-.1594			29	-.1647			43	-.1736		
				5	-.1558			17	-.1635			30	-.1691			44	-.1706		
				6	-.1578			18	-.1811			31	-.1704			45	-.1657		
								19	-.1791			32	-.1859			46	-.1680		
												33	-.1877			47	-.1676		
																48	-.1710		
				LOWER SURFACE															
				N	CP			N	CP			N	CP			N	CP	N	CP
				61	.1037			65	.1121			69	.1010			74	.0871	79	.0484
				62	.1081			66	.1109			70	.1068			75	.1030	80	.0642
				63	.1077			67	.1302			71	.1165			76	.1169	81	.0804
				64	-.1566			68	-.1839			72	.0811			77	.1554	82	.0863
												73	-.1886			78	-.1698	83	.1112
																		85	-.1628

TABLE IV.- Continued

MACH NO. = 2.300 ALPHA = 9.81

[illegible]

TABLE IV.- Continued

MACH NO. = 2.300 ALPHA = 11.82

MODEL STATION, X																			
49.213 (19.375)		59.373 (23.375)		69.533 (27.375)		74.534 (29.344)		79.535 (31.313)		84.773 (33.375)		90.013 (35.438)		96.916 (38.156)		103.823 (40.875)		119.063 (46.875)	
UPPER SURFACE																			
M	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP
86	-.1009	87	-.0243	88	-.0279	7	-.1015	89	.1406	20	-.1992	94	-.2001	34	-.2038	95	-.2166	49	-.0969
				1	-.0491			13	-.1402			26	-.0763			40	-.0653		
				2	-.1815			14	-.2112			27	-.1939			41	-.1219		
				3	-.1931			15	-.2044			28	-.2226			42	-.2261		
				4	-.1863			16	-.1964			29	-.2049			43	-.2227		
				5	-.1855			17	-.1992			30	-.2018			44	-.2072		
				6	-.1859			18	-.2024			31	-.2018			45	-.1989		
								19	-.2008			32	-.2049			46	-.1978		
												33	-.2023			47	-.1948		
																48	-.1951		
LOWER SURFACE																			
				N	CP			N	CP			N	CP			N	CP	M	CP
				61	.1591			65	.1719			69	.1611			74	.1467	79	.0732
				62	.1583			66	.1667			70	.1669			75	.1599	80	.0854
				63	.1386			67	.1643			71	.1770			76	.1739	81	.1090
				64	-.1835			68	-.2040			72	.1315			77	.1999	82	.1497
												73	-.2032			78	-.1936	83	.1544
																		85	-.1827

TABLE IV.- Continued

MACH NO. = 2.960 ALPHA = -4.04

[illegible]

TABLE IV.- Continued

MACH NO. = 2.960 ALPHA = -3.06

MODEL STATION, X																			
49.213 (19.375)		59.373 (23.375)		69.533 (27.375)		74.534 (29.344)		79.535 (31.313)		84.773 (33.375)		90.013 (35.438)		96.916 (38.156)		103.823 (40.875)		119.063 (46.875)	
UPPER SURFACE																			
N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP
86	-.0738	87	.0091	88	-.0228	7	-.0744	89	-.0050	20	-.0088	94	-.0119	34	.0005	95	.0062	49	-.0680
				1	-.0012			13	-.0045			26	.0072			40	.0414		
				2	-.0036			14	-.0111			27	.0030			41	.0150		
				3	.0020			15	-.0111			28	-.0037			42	.0124		
				4	.0165			16	-.0087			29	-.0109			43	.0088		
				5	.0268			17	.0002			30	-.0062			44	.0044		
				6	.0432			18	.0128			31	.0015			45	-.0013		
								19	.0334			32	.0201			46	.0000		
												33	.0603			47	.0185		
																48	.0568		

TABLE IV.- Continued

MACH NO. = 2.960 ALPHA = -2.05

[illegible]

TABLE IV.- Continued

MACH NO. = 2.960 ALPHA = -1.06

MODEL STATION, X																								
49.213 (19.375)		59.373 (23.375)		69.533 (27.375)		74.534 (29.344)		79.535 (31.313)		84.773 (33.375)		90.013 (35.438)		96.916 (38.156)		103.823 (40.875)		119.063 (46.875)						
UPPER SURFACE																								
M	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP					
86	-.0765	87	-.0023	88	-.0238	7	-.0777	89	.0047	20	-.0345	94	-.0345	34	-.0247	95	-.0159	49	-.0725					
				1	-.0084			13	-.0186			26	-.0052			40	.0218							
				2	-.0214			14	-.0280			27	-.0150			35	-.0317			41	-.0019			
				3	-.0172			15	-.0303			28	-.0232			36	-.0243			42	-.0054			
				4	-.0074			16	-.0317			29	-.0335			37	.0051			43	-.0124			
				5	.0043			17	-.0256			30	-.0361			38	.0332			44	-.0199			
				6	.0215			18	-.0116			31	-.0289			39	-.0743			45	-.0304			
								19	.0071			32	-.0078			46	-.0322							
												33	.0339			47	-.0151							
																48	.0293							

TABLE IV.- Continued

MACH NO. = 2.960 ALPHA = -.05

[illegible]

TABLE IV.- Continued

MACH NO. = 2.960 ALPHA = .95

MODEL STATION, X																							
49.213 (19.375)		59.373 (23.375)		69.533 (27.375)		74.534 (29.344)		79.535 (31.313)		84.773 (33.375)		90.013 (35.438)		96.916 (38.156)		103.823 (40.875)		119.063 (46.875)					
UPPER SURFACE																							
N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP				
86	-.0752	87	-.0069	88	-.0228	7	-.0758	89	.0197	20	-.0562	94	-.0526	34	-.0489	95	-.0344	49	-.0697				
				1	-.0111			13	-.0312			26	-.0129			40	.0056			50	-.0160		
				2	-.0355			14	-.0397			27	-.0284			35	-.0604			41	-.0155	51	-.0197
				3	-.0326			15	-.0471			28	-.0387			36	-.0524			42	-.0208	52	-.0208
				4	-.0275			16	-.0528			29	-.0552			37	-.0247			43	-.0300	53	-.0255
				5	-.0177			17	-.0457			30	-.0629			38	.0074			44	-.0419	54	-.0309
				6	.0005			18	-.0383			31	-.0557			39	-.0736			45	-.0634	55	-.0400
								19	-.0186			32	-.0387			46	-.0648			56	-.0512		
												33	.0067			47	-.0463			57	-.0711		
																48	-.0023			58	-.0523		
																				59	-.0302		
								60	-.0063														
LOWER SURFACE																							
				N	CP			N	CP			N	CP			N	CP	N	CP				
				61	.0277			65	.0314			69	.0201			74	.0118	79	.0470				
				62	.0291			66	.0305			70	.0268			75	.0197	80	.0376				
				63	.0258			67	.0132			71	.0293			76	.0316	81	.0104				
				64	.0221			68	.0193			72	.0082			77	.0012	82	.0115				
												73	.0432			78	.0329	83	-.0095				
																		85	.0137				

TABLE IV.- Continued

MACH NO. = 2.960 ALPHA = 1.94

[illegible]

TABLE IV.- Continued

MACH NO. = 2.960 ALPHA = 2.95

MODEL STATION, X																							
49.213 (19.375)		59.373 (23.375)		69.533 (27.375)		74.534 (29.344)		79.535 (31.313)		84.773 (33.375)		90.013 (35.438)		96.916 (38.156)		103.823 (40.875)		119.063 (46.875)					
UPPER SURFACE																							
M	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP				
86	-.0795	87	-.0122	88	-.0248	7	-.0800	89	.0350	20	-.0831	94	-.0759	34	-.0794	95	-.0544	49	-.0743				
				1	-.0173			13	-.0454			26	-.0228			40	-.0152						
				2	-.0491			14	-.0543			27	-.0434			35	-.0926			41	-.0297	50	-.0293
				3	-.0510			15	-.0655			28	-.0568			36	-.0829			42	-.0398	51	-.0395
				4	-.0524			16	-.0749			29	-.0815			37	-.0557			43	-.0513	52	-.0427
				5	-.0440			17	-.0749			30	-.0893			38	-.0288			44	-.0706	53	-.0496
				6	-.0295			18	-.0693			31	-.0872			39	-.0768			45	-.0957	54	-.0594
								19	-.0501			32	-.0645							46	-.0953	55	-.0812
												33	-.0279							47	-.0799	56	-.0891
																				48	-.0354	57	-.0917
																						58	-.0826
																						59	-.0638
																						60	-.0387
LOWER SURFACE																							
				N	CP			N	CP			N	CP			N	CP	M	CP				
				61	.0444			65	.0505			69	.0380			74	.0279	79	.0508				
				62	.0500			66	.0505			70	.0463			75	.0380	80	.0464				
				63	.0589			67	.0579			71	.0550			76	.0508	81	.0280				
				64	-.0155			68	-.0145			72	.0442			77	.0499	82	.0272				
												73	-.0022			78	-.0126	83	.0472				
																		85	-.0253				

TABLE IV.- Continued

MACH NO. = 2.960 ALPHA = 4.95

MODEL STATION, X																					
49.213 (19.375)		59.373 (23.375)		69.533 (27.375)		74.534 (29.344)		79.535 (31.313)		84.773 (33.375)		90.013 (35.438)		96.916 (38.156)		103.823 (40.875)		119.063 (46.875)			
UPPER SURFACE																					
N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP		
86	-.0796	87	-.0141	88	-.0249	7	-.0805	89	.0536	20	-.0954	94	-.0928	34	-.0914	95	-.0918	49	-.0751		
				1	-.0221			13	-.0595			26	-.0321			40	-.0237				
				2	-.0595			14	-.0674			27	-.0599			41	-.0421			50	-.0371
				3	-.0637			15	-.0800			28	-.0851			42	-.0786			51	-.0788
				4	-.0721			16	-.0908			29	-.0975			43	-.0892			52	-.0831
				5	-.0712			17	-.0959			30	-.1006			44	-.0935			53	-.0885
				6	-.0651			18	-.0950			31	-.1037			45	-.0940			54	-.0871
								19	-.0924			32	-.0975			46	-.0957			55	-.0885
												33	-.0692			47	-.0997			56	-.0871
																48	-.0760			57	-.0907
																				58	-.0914
																				59	-.0911
								60	-.0791												
LOWER SURFACE																					
				N	CP			N	CP			N	CP			N	CP	N	CP		
				61	.0630			65	.0704			69	.0586			74	.0506	79	.0545		
				62	.0714			66	.0723			70	.0699			75	.0598	80	.0600		
				63	.0760			67	.0830			71	.0786			76	.0766	81	.0491		
				64	-.0665			68	-.0679			72	.0606			77	.0985	82	.0488		
												73	-.0604			78	-.0623	83	.0777		
																		85	-.0766		

TABLE IV.- Continued

MACH NO. = 2.960 ALPHA = 5.94

[illegible]

TABLE IV.- Continued

MACH NO. = 2.960 ALPHA = 7.94

MODEL STATION, X																					
49.213 (19.375)		59.373 (23.375)		69.533 (27.375)		74.534 (29.344)		79.535 (31.313)		84.773 (33.375)		90.013 (35.438)		96.916 (38.156)		103.823 (40.875)		119.063 (46.875)			
UPPER SURFACE																					
N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP		
86	-.0804	87	-.0159	88	-.0276	7	-.0810	89	.0342	20	-.1130	94	-.1130	34	-.1114	95	-.1110	49	-.0754		
				1	-.0304			13	-.0827			26	-.0403			40	-.0335				
				2	-.0930			14	-.1061			27	-.1151			41	-.0872				
				3	-.0986			15	-.1094			28	-.1120			36	-.1110			42	-.1119
				4	-.0996			16	-.1113			29	-.1151			37	-.1158			43	-.1119
				5	-.0986			17	-.1136			30	-.1151			38	-.1198			44	-.1105
				6	-.1000			18	-.1122			31	-.1161			39	-.0780			45	-.1127
								19	-.1150			32	-.1176							46	-.1123
												33	-.1243							47	-.1127
																				48	-.1193
LOWER SURFACE																					
				N	CP			N	CP			N	CP			N	CP	N	CP		
				61	.0964			65	.1062			69	.0968			74	.0865	79	.0667		
				62	.1039			66	.1085			70	.1071			75	.0953	80	.0783		
				63	.1081			67	.1212			71	.1159			76	.1138	81	.0873		
				64	-.1024			68	-.1225			72	.0957			77	.1464	82	.0823		
												73	-.1238			78	-.1250	83	.1167		
																		85	-.1197		

TABLE IV.- Continued

MACH NO. = 2.960 ALPHA = 9.95

[illegible]

TABLE IV.- Continued

MACH NO. = 2.960 ALPHA = 11.94

MODEL STATION, X																					
49.213 (19.375)		59.373 (23.375)		69.533 (27.375)		74.534 (29.344)		79.535 (31.313)		84.773 (33.375)		90.013 (35.438)		96.916 (38.156)		103.823 (40.875)		119.063 (46.875)			
UPPER SURFACE																					
N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP		
86	-.0804	87	-.0210	88	-.0317	7	-.0811	89	.1385	20	-.1363	94	-.1363	34	-.1320	95	-.1351	49	-.0748		
				1	-.0402			13	-.1243			26	-.0507			40	-.0665			50	-.1180
				2	-.1281			14	-.1370			27	-.1394			41	-.1105			51	-.1376
				3	-.1257			15	-.1365			28	-.1409			42	-.1412			52	-.1357
				4	-.1253			16	-.1346			29	-.1368			43	-.1373			53	-.1278
				5	-.1239			17	-.1365			30	-.1378			44	-.1333			54	-.1260
				6	-.1248			18	-.1351			31	-.1378			45	-.1338			55	-.1281
								19	-.1360			32	-.1404			46	-.1342			56	-.1260
												33	-.1414			47	-.1333			57	-.1096
																48	-.1346			58	-.1245
																				59	-.1285
																				60	-.1274
				LOWER SURFACE																	
				N	CP			N	CP			N	CP			N	CP	N	CP		
				61	.1525			65	.1647			69	.1565			74	.1438	79	.0890		
				62	.1572			66	.1647			70	.1657			75	.1548	80	.1126		
				63	.1497			67	.1689			71	.1745			76	.1720	81	.1470		
				64	-.1253			68	-.1374			72	.1410			77	.1970	82	.1401		
												73	-.1450			78	-.1346	83	.1655		
																		85	-.1281		

TABLE IV.- Continued

MACH NO. = 3.300 ALPHA = -4.11

MODEL STATION, X																					
49.213 (19.375)		59.373 (23.375)		69.533 (27.375)		74.534 (29.344)		79.535 (31.313)		84.773 (33.375)		90.013 (35.438)		96.916 (38.156)		103.823 (40.875)		119.063 (46.875)			
UPPER SURFACE																					
N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP		
86	-.0394	87	.0147	88	-.0238	7	-.0416	89	-.0155	20	-.0031	94	-.0089	34	.0006	95	.0060	49	-.0349		
				1	-.0087			13	-.0009			26	.0077			40	.0182			50	.0239
				2	.0022			14	-.0056			27	-.0003			41	.0158			51	.0199
				3	.0110			15	-.0035			28	-.0031			42	.0148			52	.0243
				4	.0261			16	.0011			29	-.0049			43	.0089			53	.0243
				5	.0339			17	.0121			30	.0009			44	.0060			54	.0183
				6	.0516			18	.0251			31	.0112			45	.0040			55	.0223
								19	.0454			32	.0312			46	.0075			56	.0264
												33	.0685			47	.0304			57	-.0168
																48	.0666			58	.0272
																				59	.0514
																				60	.0711
LOWER SURFACE																					
				N	CP			N	CP			N	CP			N	CP	N	CP		
				61	-.0472			65	-.0529			69	-.0221			74	-.0395	79	.0122		
				62	-.0503			66	-.0581			70	-.0628			75	-.0659	80	-.0563		
				63	-.0483			67	-.0566			71	-.0622			76	-.0679	81	-.0680		
				64	.0656			68	.0667			72	-.0628			77	-.0664	82	-.0720		
												73	.0926			78	.0857	83	-.0632		
																		85	.0800		

TABLE IV.- Continued

MACH NO. = 3.300 ALPHA = -2.10

MODEL STATION, X																					
49.213 (19.375)		59.373 (23.375)		69.533 (27.375)		74.534 (29.344)		79.535 (31.313)		84.773 (33.375)		90.013 (35.438)		96.916 (38.156)		103.823 (40.875)		119.063 (46.875)			
UPPER SURFACE																					
N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP		
86	-.0394	87	.0001	88	-.0269	7	-.0410	89	-.0030	20	-.0249	94	-.0278	34	-.0224	95	-.0146	49	-.0357		
				1	-.0124			13	-.0150			26	-.0054			40	.0158				
				2	-.0139			14	-.0238			27	-.0135			41	.0011			50	.0078
				3	-.0082			15	-.0223			28	-.0226			42	-.0033			51	.0050
				4	.0048			16	-.0212			29	-.0255			43	-.0087			52	.0030
				5	.0162			17	-.0113			30	-.0244			44	-.0175			53	.0042
				6	.0318			18	.0022			31	-.0135			45	-.0195			54	-.0043
								19	.0204			32	.0083			46	-.0185			55	-.0047
												33	.0467			47	.0031			56	-.0035
																48	.0461			57	-.0374

TABLE IV.- Continued

MACH NO. = 3.300 ALPHA = -1.11

[illegible]

TABLE IV.- Continued

MACH NO. = 3.300 ALPHA = -.09

MODEL STATION, X																															
49.213 (19.375)		59.373 (23.375)		69.533 (27.375)		74.534 (29.344)		79.535 (31.313)		84.773 (33.375)		90.013 (35.438)		96.916 (38.156)		103.823 (40.875)		119.063 (46.875)													
UPPER SURFACE																															
M	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP												
86	.0504	87	-.0083	88	-.0286	7	.0495	89	.0078	20	-.0456	94	-.0450	34	-.0455	95	-.0343	49	.0539												
				1	-.0161			13	-.0286			26	-.0152			40	-.0054			50	-.0045										
				2	-.0296			14	-.0380			27	-.0267			41	-.0122			51	-.0102										
				3	-.0276			15	-.0411			28	-.0382			42	-.0196			52	-.0134										
				4	-.0156			16	-.0426			29	-.0473			43	-.0269			53	-.0162										
				5	-.0073			17	-.0343			30	-.0479			44	-.0401			54	-.0283										
				6	.0094			18	-.0239			31	-.0416			45	-.0470			55	-.0343										
								19	-.0062			32	-.0141			46	-.0435			56	-.0372										
												33	.0243			47	-.0225			57	-.0529										
																48	.0259			58	-.0295										
																				59	-.0005										
																				60	.0241										
				LOWER SURFACE																											
												N	CP							N	CP			N	CP			N	CP	N	CP
				61	.0125			65	.0166			69	.0065			74	.0029	79	.0451												
				62	.0031			66	.0062			70	.0151			75	.0112	80	.0241												
				63	.0016			67	-.0073			71	-.0089			76	-.0162	81	-.0045												
				64	.0353			68	.0338			72	-.0124			77	-.0176	82	-.0073												
												73	.0547			78	.0538	83	-.0279												
																		85	.0467												

TABLE IV.- Continued

MACH NO. = 3.300 ALPHA = .90

MODEL STATION, X																					
49.213 (19.375)		59.373 (23.375)		69.533 (27.375)		74.534 (29.344)		79.535 (31.313)		84.773 (33.375)		90.013 (35.438)		96.916 (38.156)		103.823 (40.875)		119.063 (46.875)			
UPPER SURFACE																					
N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP		
86	.0492	87	-.0122	88	-.0293	7	.0481	89	.0143	20	-.0561	94	-.0555	34	-.0579	95	-.0433	49	.0533		
				1	-.0179			13	-.0361			26	-.0195			40	-.0085			50	-.0092
				2	-.0361			14	-.0444			27	-.0332			41	-.0203			51	-.0180
				3	-.0350			15	-.0491			28	-.0470			42	-.0261			52	-.0196
				4	-.0272			16	-.0517			29	-.0584			43	-.0364			53	-.0265
				5	-.0184			17	-.0475			30	-.0584			44	-.0540			54	-.0426
				6	-.0018			18	-.0345			31	-.0498			45	-.0574			55	-.0499
								19	-.0179			32	-.0298			46	-.0555			56	-.0503
												33	.0103			47	-.0359			57	-.0595
																48	.0100			58	-.0370
																				59	-.0196
																				60	.0110
LOWER SURFACE																					
				N	CP			N	CP			N	CP			N	CP	N	CP		
				61	.0201			65	.0247			69	.0132			74	.0100	79	.0465		
				62	.0149			66	.0237			70	.0224			75	.0174	80	.0324		
				63	.0149			67	.0076			71	.0166			76	.0271	81	.0025		
				64	.0211			68	.0195			72	.0035			77	.0003	82	.0098		
												73	.0436			78	.0389	83	-.0096		
																		85	.0287		

TABLE IV.- Continued

MACH NO. = 3.300 ALPHA = 1.89

MODEL STATION, X																					
49.213 (19.375)		59.373 (23.375)		69.533 (27.375)		74.534 (29.344)		79.535 (31.313)		84.773 (33.375)		90.013 (35.438)		96.916 (38.156)		103.823 (40.875)		119.063 (46.875)			
UPPER SURFACE																					
N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP		
86	.0495	87	-.0159	88	-.0284	7	.0491	89	.0210	20	-.0677	94	-.0631	34	-.0688	95	-.0546	49	.0536		
				1	-.0201			13	-.0424			26	-.0230			40	-.0141			50	-.0173
				2	-.0424			14	-.0476			27	-.0385			41	-.0248			51	-.0238
				3	-.0424			15	-.0585			28	-.0528			42	-.0346			52	-.0294
				4	-.0393			16	-.0596			29	-.0688			43	-.0463			53	-.0383
				5	-.0294			17	-.0575			30	-.0683			44	-.0644			54	-.0584
				6	-.0139			18	-.0497			31	-.0620			45	-.0708			55	-.0665
								19	-.0274			32	-.0431			46	-.0649			56	-.0629
												33	.0022			47	-.0493			57	-.0685
																48	-.0067			58	-.0524
																				59	-.0339
																				60	-.0057
				LOWER SURFACE																	
				N	CP			N	CP			N	CP			N	CP	N	CP		
				61	.0272			65	.0329			69	.0239			74	.0172	79	.0507		
				62	.0303			66	.0329			70	.0314			75	.0260	80	.0374		
				63	.0329			67	.0241			71	.0360			76	.0397	81	.0133		
				64	.0048			68	.0080			72	.0274			77	.0206	82	.0181		
												73	.0251			78	.0236	83	.0100		
																		85	.0165		

TABLE IV.- Continued

MACH NO. = 3.300 ALPHA = 2.89

[illegible]

TABLE IV.- Continued

MACH NO. = 3.300 ALPHA = 3.88

MODEL STATION, X																					
49.213 (19.375)		59.373 (23.375)		69.533 (27.375)		74.534 (29.344)		79.535 (31.313)		84.773 (33.375)		90.013 (35.438)		96.916 (38.156)		103.823 (40.875)		119.063 (46.875)			
UPPER SURFACE																					
N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP		
86	.0496	87	-.0180	88	-.0279	7	.0480	89	.0366	20	-.0786	94	-.0757	34	-.0751	95	-.0717	49	.0528		
				1	-.0237			13	-.0513			26	-.0281			40	-.0233				
				2	-.0518			14	-.0596			27	-.0539			41	-.0360				
				3	-.0549			15	-.0694			28	-.0740			36	-.0776			42	-.0575
				4	-.0580			16	-.0731			29	-.0797			37	-.0512			43	-.0629
				5	-.0513			17	-.0767			30	-.0849			38	-.0302			44	-.0791
				6	-.0403			18	-.0700			31	-.0831			39	.0515			45	-.0859
								19	-.0539			32	-.0637							46	-.0874
												33	-.0316							47	-.0707
																				48	-.0336
				LOWER SURFACE																	
				N	CP			N	CP			N	CP			N	CP	N	CP		
				61	.0454			65	.0522			69	.0417			74	.0373	79	.0536		
				62	.0532			66	.0543			70	.0520			75	.0446	80	.0528		
				63	.0647			67	.0657			71	.0583			76	.0608	81	.0290		
				64	-.0346			68	-.0305			72	.0583			77	.0652	82	.0351		
												73	-.0167			78	-.0155	83	.0609		
																		85	-.0213		

TABLE IV.- Continued

MACH NO. = 3.300 ALPHA = 4.90

[illegible]

TABLE IV.- Continued

MACH NO. = 3.300 ALPHA = 5.90

MODEL STATION, X																													
49.213 (19.375)		59.373 (23.375)		69.533 (27.375)		74.534 (29.344)		79.535 (31.313)		84.773 (33.375)		90.013 (35.438)		96.916 (38.156)		103.823 (40.875)		119.063 (46.875)											
UPPER SURFACE																													
M	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP										
86	.0509	87	-.0193	88	-.0281	7	.0495	89	.0556	20	-.0874	94	-.0885	34	-.0837	95	-.0842	49	.0546										
				1	-.0281			13	-.0655			26	-.0330			40	-.0304												
				2	-.0645			14	-.0728			27	-.0725			35	-.0851			41	-.0597								
				3	-.0660			15	-.0806			28	-.0902			36	-.0881			42	-.0832								
				4	-.0707			16	-.0847			29	-.0891			37	-.0783			43	-.0837								
				5	-.0733			17	-.0858			30	-.0914			38	-.0646			44	-.0842								
				6	-.0733			18	-.0884			31	-.0931			39	.0527			45	-.0832								
								19	-.0842			32	-.0908							46	-.0842								
												33	-.0685							47	-.0881								
																				48	-.0661								
										</																			

TABLE IV.- Continued

MACH NO. = 3.300 ALPHA = 7.89

[illegible]

TABLE IV.- Continued

MACH NO. = 3.300 ALPHA = 9.90

MODEL STATION, X																														
49.213 (19.375)		59.373 (23.375)		69.533 (27.375)		74.534 (29.344)		79.535 (31.313)		84.773 (33.375)		90.013 (35.438)		96.916 (38.156)		103.823 (40.875)		119.063 (46.875)												
UPPER SURFACE																														
M	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP	N	CP											
86	.0483	87	-.0213	88	-.0317	7	.0472	89	.1024	20	-.1091	94	-.1091	34	-.1046	95	-.1037	49	.0530											
				1	-.0384			13	-.0972			26	-.0427			40	-.0479			50	-.0900									
				2	-.0992			14	-.1070			27	-.1125			41	-.0973			51	-.1029									
				3	-.0998			15	-.1049			28	-.1096			42	-.1061			52	-.0989									
				4	-.0977			16	-.1065			29	-.1079			43	-.1032			53	-.0965									
				5	-.0982			17	-.1055			30	-.1096			44	-.1046			54	-.0989									
				6	-.0992			18	-.1060			31	-.1085			45	-.1037			55	-.0977									
								19	-.1070			32	-.1131			46	-.1046			56	-.0981									
												33	-.1125			47	-.1041			57	-.0836									
																48	-.1100			58	-.0965									
																				59	-.1009									
																				60	-.1021									

TABLE IV.- Concluded

MACH NO. = 3.300 ALPHA = 11.88

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